

Keeping Pigs Cool

Pigs do not sweat, and a pig cannot supply enough moisture from its body to its skin surface to keep itself cool. When a pig is confined, it is deprived of the opportunity to wet its skin. This can lead to heat stress, reduced feed intake, and poor performance (e.g., lower pregnancy rates, slow growth). It is in your best interest to provide the necessary cooling for the herd during periods of high heat stress. Heat stress occurs for pigs at different temperatures depending on their size.

- Large pigs begin to feel heat stress when the temperature rises over 21°C (70°F) with serious side effects to production at temperatures over 29°C (85°F).
- Newborn pigs are healthiest at temperatures of 32–33°C (90–95°F) and do less well at temperatures over (or under) this range.



Pigs in the sun are easily heat-stressed

Following are seven economical methods to keep pigs cool and to maintain healthy and happy pigs.

Air circulation

Good air circulation is important for the comfort of pigs. Circulating air in pens provides direct cooling, lowers humidity, and assists cooling through evaporation. Temperatures should be regulated based on the size of the pig housed in the pens. To do this you can:

- Design open pens to let air through.
- Locate pens to maximize air flow.
- Keep drafts off newborn pigs.
- Use bigger and wider pens.
- Limit the number of pigs in each pen. Avoid overcrowding.



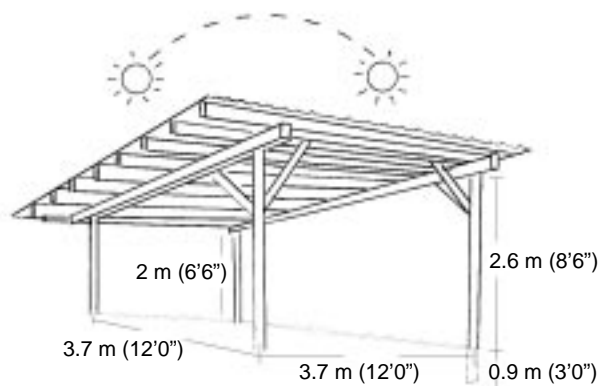
Openings in pens allow air movement to keep pigs cool

Shade

Pigs can easily be sunburned. Shade protects pigs and provides a cool surface for the animals to lie on. Ideally, the high side of the shade cover or roof should be located on the south side (for locations south of the equator) or on the north side (for locations north of the equator) to maximize

heat loss from the animals. To make the most use of shade:

- Orient the long axis of the shade structure from east to west.
- Keep your pigs from being crowded together.
- Provide shade facilities in any environment including pastures, lots, and pens.
- Utilize materials such as greenhouse shade cloth or tin roofing.



A shade cooling system

Source: Pork Industry Handbook. PIH-87. Purdue University Cooperative Extension Service

Drinking water

Provide plenty of drinking water for pigs, especially in hot weather, as the animals lose a lot of water when panting. Evaporation of water from the pig's breath helps to cool the pig. Water should be available at all times through a nipple drinker or automatic water bowl. The table below shows typical summertime water use for pigs and nipple drinker recommendations for pig facilities.

Type of animal	Water per head per day*	Flow rate for nipple drinker
Sow + litter	8 gal (30 liters)	3–4 cups/minute
Nursery pig	1 gal (4 liters)	1–1½ cups/minute
Growing pig	3 gal (11 liters)	2–3 cups/minute
Finishing hog	5 gal (19 liters)	3–4 cups/minute
Gestation sow	6 gal (23 liters)	3–4 cups/minute

*Includes water use for drinking and moderate water wastage. Water cooling systems may increase usage.

Pork Industry Handbook. PIH-87. Purdue University Cooperative Extension Service. 1992.

Wet-skin cooling: wallows

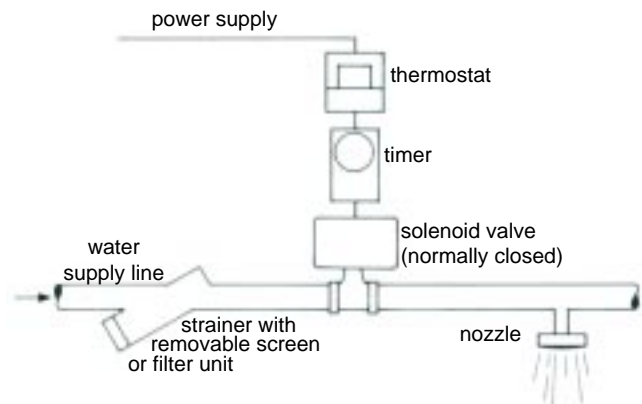
If given a choice, a pig's natural tendency is to seek out water and wet its skin by wallowing. Wallowing allows pigs to cool off when the evaporating water takes heat from the skin.

Provide wallows in open lots or pastures. Although mud on the pig's body helps protect from the sun's rays, wallows under shade work best.

Wet-skin cooling: sprinklers

Use sprinklers to cool pigs housed on concrete floors. Pigs are cooled as the water evaporates from their skin. Sprinklers use less water than hosing down each pig.

- Use sprinklers rather than foggers because foggers get only the air wet, not the skin.
- Construct sprinklers by punching holes in a polyethylene pipe with a drill.
- Use sprinkler nozzles to provide a better spray.
- Run the sprinkler for 1–2 minutes every half hour when temperatures exceed 27°C (80°F). Thermostat-controlled timers work best.
- Spray 1 gallon of water per hour to cool 50 large (114 kg/250 lb) pigs.
- Locate sprinklers over the manure area to keep sleeping and eating areas dry.



A sprinkler cooling system

Pork Industry Handbook. PIH-87. Purdue University Cooperative Extension Service. 1992.

An efficient sprinkler cooling system should have the following:

- A sediment filter (100 mesh strainer) in the water line before it reaches the sprinkler, and
- A timer-operated solenoid valve.



Pigs enjoy the cooling provided by a sprinkler

Wet-skin cooling: drip

Drip cooling keeps sows in farrowing crates comfortable. A

hose with a drip nozzle is suspended over each farrowing crate in a position that allows water to drip slowly over the sow's neck and shoulder area. Evaporation of the water has a cooling effect, making the sow more comfortable and reducing heat stress. A temperature-activated electronic device can be used to control the water flow.



Drip cooling a sow

Hosing

In an emergency, pigs can be cooled by hosing them down once an hour. Use this method as a last resort because it:

- Wastes a lot of fresh water.
- Creates a lot of wastewater.
- Takes time to hose down each pig.

For additional resources and publications, refer to ADAP fact sheet 2003-11 on *Additional Information for Swine Waste Management*.

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